



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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November 16, 2012

Mr. Charles P. Nicholson
NEPA Compliance Manager
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Subject: EPA NEPA Review Comments on TVA's DEIS for "Dam Safety Modifications at Cherokee, Fort Loudon, Tellico and Watts Bar Dams"; CEQ #20120315

Dear Mr. Nicholson:

The U.S. Environmental Protection Agency (EPA) has reviewed the subject Tennessee Valley Authority (TVA) Draft Environmental Impact Statement (DEIS) in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. It is our understanding that TVA proposes to implement permanent solutions to minimize the potential effects of the Probably Maximum Flood (PMF) event at the Cherokee, Fort Loudon, Tellico and Watts Bar Dams.

The PMF event is defined in the EIS as the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area.¹ To minimize the potential effects of the PMF event, TVA implemented precautionary measures and installed stonefilled HESCO barriers at all four dams in 2009. In a January 25, 2012 letter the Nuclear Regulatory Commission (NRC) stated that the *"The NRC staff is unable to conclude that these sand baskets were designed to withstand impacts from large debris during a flood. If a design flood were to occur, there is a high likelihood that significant debris would accompany the flood waters which could impact the baskets. There is the potential for this debris to damage the baskets or push the individual baskets apart causing a breach."*² In this DEIS, TVA explores permanent solutions for replacement of the stonefilled HESCO barriers at all four dams.

Alternatives

TVA analyzed three alternatives in the DEIS including the no-action alternative:

- **Alternative A: No Action Alternative**

¹ p. iii of DEIS

² p. 1-7 of DEIS

- **Alternative B (preferred):** Permanent Modifications of Dam Structures: Concrete Floodwalls and Earthen Embankments/Berms
- **Alternative C:** Permanent Modifications of Dam Structures: All Concrete Floodwalls

Under both Alternatives B and C, the concrete floodwalls and/or earthen embankments would vary in height from 2.3 feet to 6.6 feet depending on the location.³ EPA appreciates that TVA identified the agency preferred alternative (Alternative B) in the DEIS.

TVA chose to combine discussions of the affected environment and environmental consequences into Chapter 3. TVA provided analysis of the proposed action's impact on the following resource areas: Geology and Soils, Water Resources, Air Quality and Greenhouse Gas Emissions, Flooding and Floodplains, Wetlands, Aquatic Ecology, Terrestrial Ecology, Threatened and Endangered Species, Land Use, Socioeconomics and Environmental Justice, Cultural and Historic Resources, Noise, Transportation, Visual Resources, Recreation, Solid and Hazardous Waste, and Public Safety. The summary table (ES-1) in the executive summary provides a clear and concise overview of the alternatives discussed in the EIS and the potential impacts on different resource areas. EPA encourages resource agencies to use these types of tables to summarize impacts of proposed actions.

EPA Recommendations

Probable Maximum Flood (PMF) Event Discussion:

The PMF event is the real driving force of the proposed action by TVA. If not for estimates of the PMF event causing elevations at the dams that would cause water to flow over the top of the them, TVA would not have pursued the temporary solution of the HESCO barriers or the permanent solutions proposed in this DEIS. EPA believes the description of the PMF event and how the PMF elevation is determined should be very clear. It is stated in the DEIS that the PMF is "defined as the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area."⁴ EPA recommends a more detailed definition of the PMF event be provided in the FEIS. EPA recommends that the additional details include examples of a "critical meteorological and hydrological" event.

Public Comments:

EPA appreciates TVA's efforts to categorize and summarize the significant public comments on this proposed action. EPA notes that the majority of the commenters requested that the HESCO barriers be removed and a significant number of commenters were concerned about the adequacy of the HESCO barriers. These public positions

³ p. iii of DEIS

⁴ p. 1-1 of DEIS

appear to reinforce TVA's preferred alternative of removal of the HESCO barriers and implementation of a permanent solution.

Engineering Constraints:

In the discussion section of the alternatives in the DEIS it is stated that "Due to site and engineering constraints, floodwalls were selected as the permanent modification type for five of the six Cherokee Dam segments."⁵ EPA recommends that these "engineering constraints" at the Cherokee Dam site be further explained in the FEIS.

Cost Estimates for Alternatives:

Minimal information is provided with regard to the cost of maintaining the existing HESCO barriers and the construction of the permanent solutions described in Alternatives B and C. EPA recommends providing additional details regarding the estimated cost of all Alternatives in the FEIS. Based on Table 1-2, cost of these projects is listed as the fourth most commented on issue during scoping.

Staging and Borrow Areas:

No discussion was provided for the impact of the staging and borrow areas for several resource areas (Aquatic Ecology, Flooding / Floodplains, etc.). EPA recommends that additional details be provided in the FEIS regarding the impact of staging areas and borrow areas on these resources. Using a consistent format for the environmental consequences section would be helpful for the reader.

Noise Impact Mitigation:

Noise impacts associated with the projects at all the dams are discussed in great detail in Chapter 3 - Section 3.12. When discussing mitigation associated with noise impacts, it is stated in the DEIS that "With implementation of mitigation measures such as limiting access to certain recreation areas during construction, noise impacts would be minimized to a certain extent."⁶ TVA states in other areas of the DEIS that it is somewhat unclear on which areas may have limited access. Since access to recreational areas and parking areas can impact the public use of these areas, EPA recommends that TVA provide additional clarification (if available) in the FEIS on areas proposed to be closed during construction or limited access for noise mitigation.

EPA DEIS Rating

EPA commends TVA for its efforts to develop an EIS that provides the public with a clear set of alternatives for permanent solutions to the PMF event. EPA request that TVA provide specific responses to our comments in a dedicated section in the FEIS. EPA rates this DEIS as an "LO" (Lack of Objection).

⁵ p. 2-4 of DEIS

⁶ p. 3-84 of DEIS

EPA appreciates the opportunity to review the DEIS. Should TVA have questions regarding our comments, please feel free to contact Dan Holliman of my staff at 404/562-9531 or holliman.daniel@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Mueller', followed by a horizontal line.

Heinz J. Mueller
Chief, NEPA Program Office
Office of Policy and Management